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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,886	12/13/2004	Yoshihiro Yazawa	JFE-04-1330	1600
35811 7590 04/13/2007 IP GROUP OF DLA PIPER US LLP ONE LIBERTY PLACE 1650 MARKET ST, SUITE 4900 PHILADELPHIA, PA 19103			EXAMINER YEE, DEBORAH	
			ART UNIT	PAPER NUMBER
			1742	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/13/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/517,886	<b>Applicant(s)</b> YAZAWA ET AL.	
	<b>Examiner</b> Deborah Yee	<b>Art Unit</b> 1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                                                          |                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                              | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                     | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>12-13-04;6-5-06</u> . | 6) <input type="checkbox"/> Other: ____                                                |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 to 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese patent 2000-336462.

3. JP'462 specific ferritic stainless steel examples in the table on page 6 meet the claimed composition and when calculated, meets the  $Ti/(C+N) = 8$  to 10. Moreover, English abstract discloses the presence of TiPFe precipitates up to 0.01%. Also similar to method claims, JP'462 in paragraph 14 on page 3 of machine-English translation discloses making steel by hot rolling and/or cold rolling followed by heating at 700C for 100 hours. Note the prior art temperature of 700C would appear to be at the precipitation nose temperature of Ti base precipitates  $\pm 50C$  as recited by the method claims, since applicant's specification on page 33, lines 1-2 defines the temperature to be in the range 650 to 850C. Also prior art holding time of 100 hours is within the time range of 1 to 100 hours disclosed in applicant's specification on page 33, lines 8-10.

4. Even though prior art does not teach a ferrite grain size of 6 or more or the average diameter of Ti-base precipitations ( $D_p$ ) = 0.05 to 1 microns or at least 50% of the P content is precipitated in the form of Ti base precipitates as recited by one or

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more of the claims, such would be expected since composition and process of making and other properties are closely met, and in absence of proof to the contrary.

5. Claims 1 to 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese patent 9-137231 cited by applicant in IDS dated June 5, 2006.

6. JP'231 specific example on page 3 meets the claimed composition and according to the English abstract is processed in substantially the same manner as claimed by applicant comprising the steps of hot rolling and/or cold rolling followed by annealing at 830 to 870C for 2 hours or more. Note the prior art temperature range of 830 to 870C would appear to be at the precipitation nose temperature of Ti base precipitates +/-50C as recited by the method claims, since applicant's specification on lines 1-2 on page 33 defines the temperature to be in the range 650 to 850C. Also prior art holding time of 2 hours or more is within the time range of 1 to 100 hours disclosed in applicant's specification on lines 8-10 of page 33.

7. Even though prior art does not teach a ferrite grain size of 6 or more or the Ti-base precipitate average diameter ( $D_p$ ) = 0.05 to 1 microns or at least 50% of the P content is precipitated in the form of Ti base precipitates as recited by one or more of the claims, such properties would be expected since composition and process of making are closely met, and in absence of proof to the contrary.

8. Claims 1 to 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshitake et al (US Patent 6,855,213).

9. Yoshitake ferritic stainless steel examples in Tables 1 and 2 in columns 13-16 meet the claimed composition. Moreover, lines 18-30 in column 7 discloses Ti

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inclusions (equivalent to precipitates) have a particle size of no greater than 1 or 1.5 microns (within claimed range of 0.05 to 1 microns). Prior art steel also has a very fine equiaxed grain structure; and hence would suggest a grain size number of 6.0 or more.

10. In regard to method claims, Yoshitake on lines 1 to 19 in column 8 teaches subjecting steel to hot rolling, cold rolling followed by recrystallization annealing for at least 1 second at 800-1000C which overlaps with applicant's range of 650 to 850C and therefore suggest a temperature at the precipitation nose temperature of Ti base precipitates +/-50C as recited by the method claims.

11. Even though prior art does not teach at least 50% of the P content is precipitated in the form of Ti base precipitates as recited by one or more of the claims, such property would be expected since composition and process of making and other properties are closely met, and in absence of proof to the contrary.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-27211253. The examiner can normally be reached on monday-friday 6:00am-2:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Deborah Yee  
Primary Examiner  
Art Unit 1742

dy